

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

**Complete if Known**

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet	1	of	4
-------	---	----	---

<b>Application Number</b>	10/731,542
<b>Filing Date</b>	December 3, 2003
<b>First Named Inventor</b>	Esmail Behboodi
<b>Art Unit</b>	1632
<b>Examiner Name</b>	
<b>Attorney Docket Number</b>	GTC-60

## U.S. PATENT DOCUMENTS

[illegible]

## FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner  
Signature**

/Valarie Bertoglio/

Date  
Considered

05/17/2006

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.<sup>1</sup> Applicant's unique citation designation number (optional).<sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov), or MPEP 901/04.<sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).<sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.  
<sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/731,542
				Filing Date	December 3, 2003
				First Named Inventor	Esmail Behboodi
				Group Art Unit	1632
				Examiner Name	
Sheet	2	of	4	Attorney Docket Number	GTC-60

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
VB		Alberio R, <i>et al.</i> , <i>Mammalian Oocyte Activation: Lessons from the Sperm and Implications for Nuclear Transfer</i> , INT J DEV BIOL 2001; 45: 797-809.	
VB		Baguisi A, <i>et al.</i> , <i>Production of Goats by Somatic Cell Nuclear Transfer</i> , NAT BIOTECH 1999; 17: 456-461.	
VB		Bondioli K, <i>et al.</i> , <i>Production of Identical Bovine Offspring by Nuclear Transfer</i> , THERIOGENOLOGY 1990; 33: 165-174.	
VB		Booth PJ, <i>et al.</i> , <i>Effect of Two Activation Treatments and Age of Blastomere Karyoplasts on In Vitro Development of Bovine Nuclear Transfer Embryos</i> , MOL REPROD DEV 2001; 60: 377-383.	
VB		Campbell, KHS, Mcwhire J, Ritchie WA And I. Wilmut. <i>Sheep Cloned by Nuclear Transfer From a Cultured Cell Line</i> , NATURE 1996; 380: 64-66.	
VB		Cibelli JB, <i>et al.</i> , <i>Cloned Transgenic Calves Produced From Nonquiescent Fetal Fibroblasts</i> . SCIENCE 1998; 280: 1256-1258.	
VB		Collas P, and Barnes FL., <i>Nuclear Transplantation by Microinjection of Inner Cell Mass and Granulosa Cell Nuclei</i> , MOL REPROD DEV. 1994 Jul;38(3):264-7.	
VB		Fissore A, <i>et al.</i> , <i>Inositol trisphosphate-induced calcium release in the generation of calcium oscillations in bovine eggs</i> , BIOL REPROD Oct. 1995; 53(4):766-774	
VB		Gavin, W.G., <i>Gene Transfer Into Goat Embryos</i> , TRANSGENIC ANIMALS – GENERATION AND USE, L. M. Houdebine ed., (Harwood Academic Publishers GmbH., 1996).	
Examiner Signature		Date Considered	
/Valarie Bertoglio/		05/17/2006	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901/04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

*Complete if Known*

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Application Number</b>	10/731,542
				<b>Filing Date</b>	December 3, 2003
				<b>First Named Inventor</b>	Esmail Behboodi
				<b>Art Unit</b>	1632
				<b>Examiner Name</b>	
<b>Sheet</b>	3	of	4	<b>Attorney Docket Number</b>	GTC-60

VB		Kasinathan P, et al., <i>Effect of Fibroblast Donor Cell Age and Cell Cycle on Development of Bovine Nuclear Transfer Embryos In Vitro</i> , BIOL REPROD. 2001; 64(5): 1487-1493.	
VB		Koo DB, et al., <i>In Vitro Development Of Reconstructed Porcine Oocytes After Somatic Cell Nuclear Transfer</i> . BIOL REPROD 2000; 63: 986-992.	
VB		Lai, L, et al., <i>Feasibility of Producing Porcine Nuclear Transfer Embryos by Using G2/M Stage Fetal Fibroblasts as Donors</i> , BIOL REPROD 2001; 65: 1558-1564.	
VB		Meng L, et al., <i>Rhesus Monkeys Produced by Nuclear Transfer</i> , BIOL REPROD 1997; 57: 454-459.	
VB		Park KW, et al., <i>Developmental Potential of Porcine Nuclear Transfer Embryos Derived from Transgenic Fibroblasts Infected with the Gene for the Green Fluorescent Protein: Comparison of Different Fusion/Activation Conditions</i> , BIOL REPROD 2001; 65: 1681-1685.	
VB		Ponimaskin E, et al., <i>Sendai Virosomes Revisited: Reconstitution with Exogenous Lipids Leads to Potent Vehicles for Gene Transfer</i> , VIROLOGY, 2000 Apr 10;269(2):391-403.	
VB		Stice SL, et al., <i>Pluripotent Bovine Embryonic Cell Lines Direct Embryonic Development Following Nuclear Transfer</i> , BIOL REPROD. 1996 Jan; 54(1):100-10.	
VB		Stice SL, and Keefer CL., <i>Multiple Generational Bovine Embryo Cloning</i> , BIOL REPROD 1993 Apr;48(4):715-9.	

<b>Examiner Signature</b>	/Valarie Bertoglio/	<b>Date Considered</b>	05/17/2006
---------------------------	---------------------	------------------------	------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.<sup>1</sup> Applicant's unique citation designation number (optional).<sup>2</sup> See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901/04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

Complete if Known

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				<b>Application Number</b>	10/731,542
				<b>Filing Date</b>	December 3, 2003
				<b>First Named Inventor</b>	Esmail Behboodi
				<b>Art Unit</b>	1632
				<b>Examiner Name</b>	
<b>Sheet</b>	4	<b>of</b>	4	<b>Attorney Docket Number</b>	GTC-60

VB		Stice SL and JM Robl, <i>Nuclear Reprogramming in Nuclear Transplant Rabbit Embryo</i> , BIOL REPROD 1992; 47: 636-643	
VB		Wakayama T, et al., <i>Full Term Development of Mice from Enucleated Oocytes Injected with Cumulus Cell Nuclei</i> , NATURE 1998; 23: 369-374.	
VB		Wall RJ, et al., <i>Transgenic Dairy Cattle: Genetic Engineering on a Large Scale</i> , J DAIRY SCI. 1997; 80(9): 2213-24.	
VB		Wells DN, et al., <i>Production of Cloned Calves Following Nuclear Transfer with Cultured Adult Mural Granulosa Cells</i> , BIOL REPROD 1999; 60: 996-1005.	
VB		Westhusin ME, Pryor JH, and Bondioli KR., <i>Nuclear Transfer In The Bovine Embryo: A Comparison Of 5-Day, 6-Day, Frozen-Thawed, And Nuclear Transfer Donor Embryos</i> , Mol Reprod Dev. 1991 Feb;28(2):119-23.	
VB		Wilmut I, et al., <i>Viable Offspring Derived From Fetal and Adult Mammalian Cells</i> . NATURE 1997; 385: 810-813.	
VB		Yang X, S Jiang, A Kovacs and RH Foote, <i>Nuclear Totipotency of Cultured Rabbit Morulae to Support Full-Term Development Following Nuclear Transfer</i> , BIOL REPROD 1992; 47: 636-643.	
VB		Yong Z And L Yuqiang, <i>Nuclear-Cytoplasmic Interaction and Development of Goat Embryos Reconstructed by Nuclear Transplantation: Production of Goats by Serially Cloning Embryos</i> , BIOL REPROD 1998; 58: 266-269.	
VB		Zou X, et al., <i>Production of Cloned Goats from Enucleated Oocytes Injected with Cumulus Cell Nuclei or Fused with Cumulus Cells</i> , CLONING 2001; 3 (1): 31-37.	

<b>Examiner</b>	<b>Date</b>
<b>Signature</b> /Valarie Bertoglio/	<b>Considered</b> 05/17/2006

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.<sup>1</sup> Applicant's unique citation designation number (optional).<sup>2</sup> See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901/04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

***Complete if Known***

<b>Application Number</b>	10/731,542
<b>Filing Date</b>	December 3, 2003
<b>First Named Inventor</b>	Esmail Behboodi
<b>Art Unit</b>	1632
<b>Examiner Name</b>	
<b>Attorney Docket Number</b>	GTC-60

(use as many sheets as necessary)

Sheet	1	of	2
-------	---	----	---

[illegible]

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -	Number <sup>4</sup> -	Kind Code <sup>5</sup> (if known)				
VB		WO	01/19182	A	3/22/2001			
VB		WO	01/84920	A	11/15/2001.			

**Examiner  
Signature**

/Valarie Bertoglio/

Date  
Considered

05/17/2006

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.<sup>1</sup> Applicant's unique citation designation number (optional).<sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901/04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

<sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing this form, call 1-800-PTO-9199 (!-800—786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/731,542
				Filing Date	December 3, 2003
				First Named Inventor	Esmail Behboodi
				Group Art Unit	1632
Examiner Name					
Sheet	2	of	2	Attorney Docket Number	GTC-60

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>	
VB		Forsberg, Erik J. Et al., "Production of cloned cattle from in vitro systems," Biology of Reproduction, Vol. 67, No. 1, July 2002, 327-333.		
VB		Reggio, B C et al., "Cloned Transgenic Offspring Resulting From Somatic Cell Nuclear Transfer in the Goat: Oocytes Derived from Both Follicle-Stimulating Hormone-Stimulated and Non-stimulated Abarroir-Derived Ovaries," Biology of Reproduction, Society For the Study of Reproduction, Vol. 65, No. 5, November 2001, 1528-1533.		
VB		Walker, S C et al., "A highly Efficient Method for Porcine Cloning By Nuclear Transfer Using In Vitro-Matured Oocytes," Cloning and Stem Cells, Vol. 4, No.2., 2002, 105-122.		
VB		Zakhartchenko, V et al., "Nuclear Transfer in cattle with non-transfected and transfected fetal or cloned transgenic fetal and postnatal fibroblasts," Molecular Reproduction and Development, Vol. 60, No. 3, November 2001, 362-369.		
VB		Zakhartchenko, V et al., "Effects of Serum Starvation and Re-Cloning on the Efficiency of Nuclear Transfer Using Bovine Fetal Fibroblasts," Journal of Reproduction and Fertility, Vol. 115, No. 2, March 1999, 325-331.		

Examiner Signature	/Valarie Bertoglio/	Date Considered	05/17/2006
--------------------	---------------------	-----------------	------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.<sup>1</sup> Applicant's unique citation designation number (optional).<sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901/04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.